

REMARKS

Claims 1 through 20 remain before the Examiner for reconsideration. Claims 6 and 15 have been amended. The amendments to those Claims are indicated in the Appendix hereto in which additions to the claims are marked by underlining and deletions from the claims are marked by bracketing.

In the Office Action, the Examiner indicated that "in view of Applicants' amendment to claims 6 and 15, filed April 3, 2002, the rejection under 35 U.S.C. 112, second paragraph is withdrawn."

Applicants have amended Claims 1 and 10 to obviate the Examiner's rejection. The Applicants respectfully assert that the claims, as amended, comply fully with the requirement of Section 112.

The Examiner maintained the rejection Claims 10-12, 16, 19 and 20 under 35 U.S.C. Section 102(b) as being clearly anticipated by U.S. Pat. No. 3,590,060. Specifically, the Examiner asserted that:

Applicant's arguments filed April 3, 2002 traversing the rejection of claims 10-12, 16, 19 and 20 under 35 U.S.C. 102(b) as anticipated by U.S. Pat. 3,590,060 have been fully considered but they are not persuasive. Applicants argued that the trifluoropropyl groups disclosed in the '060 "do not contain sufficient fluorine atoms to cause the compounds thereof to partition sufficiently preferentially into a fluorous phase to achieve an effective fluorous-organic phase separation." The Examiner respectfully disagrees. The broad terms "fluorocarbon" or "perfluoroalkyl" in the instant claims for the variable "Rf" read on the group CF₃. Furthermore, the claims do not recite any limitations as to partition properties of these groups. Therefore, the compounds disclosed by the '060 patent read on the instant claims. Thus, the rejection of the claims stand.

Applicants respectfully traverse the Examiner's rejection.

Once again, the '060 Patent discloses tin compounds that include one or more trifluoropropyl groups ((CF₃CH₂CH₂)-). Although, the trifluoropropyl groups of the

'060 Patent contain fluorine atoms, those groups are not a fluorous groups as defined in the present invention. In that regard, page 6 of the present specification sets forth that:

As used herein, the term "fluorous", when used in connection with an organic (carbon-containing) molecule, moiety or group, refers generally to an organic molecule, moiety or group having a domain or a portion thereof rich in carbon-fluorine bonds (for example, fluorocarbons or perfluorocarbons, fluorohydrocarbons, fluorinated ethers and fluorinated amines). Fluorous compounds generally preferentially partition into a fluorous phase during fluorous-organic phase separation.

To further clarify the fluorous nature of the Rf groups of the present invention, Applicants have amended Claims 10 and 19 to indicate that Rf is a fluorohydrocarbon group of at least 3 carbons, a perfluorocarbon group of at least 3 carbons, a fluorinated ether group or a fluorinated amine group. The trifluoropropyl groups of the '060 patent do not contain sufficient fluorine atoms to cause the compounds thereof to partition sufficiently preferentially into a fluorous phase to achieve an effective fluorous-organic phase separation.

The Examiner also Claims 1-16 under 35 U. S.C. 102(a) "as being clearly anticipated by Curran et al., J. Am. Chem. Soc., Vol. 121, pp. 6607-6615 (Published on the Web 07/02/1999)." Specifically, the Examiner asserted that:

Curran et al. discloses a tin hydride of the formula $[Rf-(CH_2)_n]Me_2SnH$ where Rf is a C_4-C_{10} perfluorocarbon and n is 2 or 3. Note that the inventive entity of the Curran et al. reference is different from the instant application.

Applicants respectfully traverse the Examiner's rejection. Curran et al. should not be considered prior art for the present invention. The publication date of Curran et al. is less than one year prior to the filing date of the present application. Although the authorship of Curran et al. is different from the inventorship of the present patent application, the authors of Curran et al. who are not inventors herein (Sabine Hadida and Sun-Young Kim) were included as authors in the Curran et al. paper for work on compounds of the formula $[Rf(CH_2)_n]_3SnH$ and not the compounds of the formula $[Rf-(CH_2)_n]Me_2SnH$.

Only the inventors of the present invention, Dennis P. Curran and Zhiyong Luo, are inventors/authors of the compounds of the formula [Rf-(CH₂)_n]Me₂SnH. With respect to the case of compounds of the formula [Rf-(CH₂)_n]Me₂SnH, the authorship/inventorship of the Curran et al. reference and the inventorship of the present patent application is identical. Moreover, as evidenced, for example, by the Curran et al. reference, Applicants invented the compounds of the present invention prior to the publication of the Curran et al. reference and can swear behind that reference if required. Applicants have submitted herewith a Declaration of Dennis P. Curran regarding the authorship/inventorship of the Curran et al. reference and of the present invention.

The Examiner further indicated that the "allowability of claims 17 and 18 is withdrawn in view of the newly discovered reference(s) to Bucher et al., Tetrahedron Letters, Vol. 41, pp. 9617-9621 (Published December 2, 2000)." Specifically, the Examiner asserted that:

Claims 17 and 18 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. The inventive entity, Brian Bucher and Dennis P. Curran, in the Tetrahedron Letters reference is different from the inventive entity of the instant application, Dennis P. Curran and Zhiyong Luo. Further note that the reference discloses the compound of the formula (C₆F₁₃CH₂CH₂)₂SnO which reads on the instant claims. Thus, the reference raises a question as to who is the inventive entity.

The inventive entity of Dennis P. Curran and Zhiyong Luo in the present invention is correct. Brian Bucher worked under the direction of Dennis P. Curran in performing some studies of fluorous compounds including a compound of the formula (C₆F₁₃CH₂CH₂)₂SnO after the invention date of the present invention. Brian Bucher is not an inventor of the present invention. See Declaration of Dennis P. Curran.

In view of the above remarks, the Applicants respectfully request that the Examiner, indicate the allowability of Claims 1-20, and arrange for an official Notice of Allowance to be issued in due course.

Respectfully submitted,

DENNIS P. CURRAN ET AL.

By 
Henry E. Bartony, Jr., Esquire
Reg. No. 34,772

Bartony & Hare
Law & Finance Building
Suite 1801
429 Fourth Avenue
Pittsburgh, Pennsylvania 15222
412-338-8632 (telephone)
412-338-6611 (fax)

Attorney for Applicants

Appendix 1

Version with markings to show changes made

Please delete the text of Claims 4, 10, 13 and 19 and insert therefor the following:

4. (Once Amended) The method of Claim 1 wherein Rf is a linear perfluoroalkyl group of 3 to 20 carbons, a branched perfluoroalkyl group of 3 to 20 carbons, [and] or a hydrofluoroalkyl group of 3 to 20 carbons, the hydrofluoroalkyl group comprising up to one hydrogen atom for each two fluorine atoms.

10. (Once Amended) A chemical compound having the formula:



wherein n is 1 or 2, R is a C₁-C₆ alkyl group, X¹ is H, F, Cl, Br, I, N₃, OR¹, OOR¹, SR¹, SeR¹, CN, NC, NR¹R², an aryl group, a heteroaryl group, an alkyl group of 1 to 20 carbons, an alkenyl group, an alkynyl group, -C(O)R³, M((Rs')(Rf'))₃, OM((Rs')(Rf'))₃ or OOM((Rs')Rf'))₃, wherein M is Si, Ge, or Sn, and wherein R¹ and R² are each independently the same or different H, an alkyl group, -SO₂R³ or -C(O)R³, wherein R³ is an alkyl group or an aryl group, and wherein Rs and Rs' are each independently the same or different an alkylene group of 1 to 6 carbons or a phenylene group, [and] wherein Rf [and Rf' are each independently] is a fluorohydrocarbon group of at least 3 carbons, a perfluorocarbon group of at least 3 carbons, a fluorinated ether group or a fluorinated amine group, and wherein Rf' is a fluorohydrocarbon group, a perfluorocarbon group, a fluorinated ether group or a fluorinated amine group.

13. (Once Amended) The compound of Claim 10 wherein Rf is a linear perfluoroalkyl group of 3 to 20 carbons, a branched perfluoroalkyl group of 3 to 20 carbons, [and] or a hydrofluoroalkyl group of 3 to 20 carbons, the hydrofluoroalkyl group comprising up to one hydrogen atom for each two fluorine atoms.

19. (Once Amended) A chemical compound having the formula:



wherein X^1 and X^2 are independently, the same or different, H, N_3 , OR^1 , OOR^1 , SR^1 , SeR^1 , CN, NC, NR^1R^2 , a heteroaryl group, an alkyl group of 2 to 20 carbons, an alkenyl group, an alkynyl group, $-\text{C}(\text{O})\text{R}^3$, $\text{M}((\text{Rs}')(\text{Rf}'))_3$, $\text{OM}((\text{Rs}')(\text{Rf}'))_3$ or $\text{OOM}((\text{Rs}')(\text{Rf}'))_3$, wherein M is Si, Ge, or Sn, and wherein R^1 and R^2 are each independently the same or different H, an alkyl group, $-\text{SO}_2\text{R}^3$ or $-\text{C}(\text{O})\text{R}^3$, wherein R^3 is an alkyl group or an aryl group, wherein Rs and Rs' are each independently the same or different an alkylene group of 1 to 6 carbons or a phenylene group, [and] wherein Rf [and Rf' are each independently] is a fluorohydrocarbon group of at least 3 carbons, a perfluorocarbon group of at least 3 carbons, a fluorinated ether group or a fluorinated amine group, and wherein Rf' is a fluorohydrocarbon group, a perfluorocarbon group, a fluorinated ether group or a fluorinated amine group.